



## KTS 200



**BOSCH**

**de** Betriebsanleitung

**Systemtester für die Steuergeräte-Diagnose**

**es** Instrucciones de manejo

**Comprobador del sistema para diagnóstico de unidades de control**

**pt** Manual de serviço

**Aparelho de teste do sistema para a diagnose de unidades de comando**

**tr** Kullanma talimatı

**Kontrol üniteleri arıza tespisi için sistem test cihazı**

**en** Instruction manual

**System tester for control unit diagnosis**

**it** Manuale d'istruzioni

**Tester di sistema per la diagnosi delle centraline di comando**

**pl** Instrukcja obsługi

**tester systemu do diagnostyki sterowników**

**fr** Instructions d'emploi

**Testeur système pour diagnostic des centrales de commande**

**sv** Bruksanvisning

**Systemtester för styrkonsdiagnos**

**cs** Návod k obsluze

**Systémový tester pro diagnostiku řídicích jednotek**

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## 1. Symbols Used

Pictograms linked with the key words Danger, Warning and Caution are warnings and always indicate an immediate or potential hazard to the user.



### Danger

Immediate danger that could cause serious personal injury or death.



### Warning

Potentially dangerous situation that could cause serious personal injury or death.



### Caution

Potentially dangerous situation that could cause personal injury or damage to property.



**Important** – warns of a potentially hazardous situation in which the product, the test sample or other object in the vicinity could be damaged.

In addition to these warnings, the following symbols are also used:



**Info** – In addition to these warnings, the following symbols are also used.

➤ **Single-step procedure** – instructions for a procedure that can be completed in just one step.

⇒ **Intermediate result** – an intermediate result is displayed during a procedure.

→ **Final result** – the final result is displayed at the end of the procedure.

## 2. User instructions

### 2.1 Important notes

Important notes on the agreement pertaining to copyright, liability and warranty, about the user group and obligation on the part of the contractor, are available in the separate instructions entitled "Important notes and safety instructions on Bosch Test Equipment". These are to be read thoroughly before using, connecting and operating the product and they must be observed.

### 2.2 Safety instructions

All safety instructions are available in the separate instructions "Important notes and safety instructions" on Bosch Test Equipment". These are to be read thoroughly before using, connecting and operating the product and they must be observed.

### 2.3 Disposal



**This product is subject to European guidelines 2002/96/EG (WEEE).**

Old electrical and electronic devices, including cables and accessories or batteries must be disposed of separate to household waste.

- Please use the return and collection systems in place for disposal in your area.
- Damage to the environment and hazards to personal health are prevented by properly disposing of old equipment.

### 2.4 Electromagnetic compatibility (EMC)

This product is a product of Class A as under EN 61 326.



This product can cause radio interference in the home; in this case the operator may be asked to implement appropriate measures.

### 2.5 Open Source software

An overview of the Open Source software licenses for the KTS 200 is available on the "**ESI[tronic] Startcenter**" DVD as an Adobe PDF document.

## 3. Product description

### 3.1 Application

The KTS 200 is a system tester for control unit diagnosis in vehicle workshops. The KTS 200 features licensed control unit diagnosis software and has the following functions:

- Error memory reading
- Actual value display
- Actuator initiation
- Use of control unit specific functions

**!** The KTS 200 is a precision device and must not be exposed to the effects of heat (e.g. direct sunlight), impacts or vibration, magnetic fields or excessive levels of dirt.

### 3.2 Requirements

#### 3.2.1 Hardware

To license the KTS 200 ESI[tronic] software and perform the software update for KTS 200 control unit diagnostics, a PC/laptop with the operating system WIN 2000, WIN XP (SP2) or WIN Vista and at least one free USB port is required. The USB port must support the USB 2.0 protocol – USB 1.x protocols are not supported.

To license the KTS 200 ESI[tronic] software and update the KTS 200 control unit diagnosis software, a PC/laptop with the WIN XP or Windows Vista operating system and at least one free USB port is required.

**!** The KTS 200 may not be opened. Opening the KTS 200 erases its licensing data. It is then no longer possible to perform control unit diagnosis.

#### 3.2.2 Software

The control unit diagnosis software on the KTS 200 must be activated using the ESI[tronic] software license key.

### 3.3 Delivery specification

Description	Order number
KTS 200	
Power pack	1 687 022 889
Power supply lead	1 684 461 106
USB connecting lead, 1 m	1 684 465 491
OBD diagnostic lead, 1.5 m	1 684 465 555
DVD ESI[tronic] Startcenter	1 987 P12 005
Case	1 685 438 019
Connecting lead for cigarette lighter socket (12 V)	1 684 465 584
Important information and safety instructions	1 689 979 922
KTS 200 operating instructions	1 689 989 001
Set of leads <sup>1)</sup>	1 687 001 855
Set of leads <sup>1)</sup>	1 687 001 875
Wall bracket <sup>1)</sup>	1 681 320 082

<sup>1)</sup> In some cases, special accessory only

**!** Always store the KTS 200 and accessories in the case when not in use.

### 3.4 Special accessories

Information on special accessories, such as vehicle-specific connecting leads, can be obtained from your authorized Bosch dealer.

### 3.5 Device description

The KTS 200 is a modular, portable diagnostic system for control unit diagnosis that can be used anywhere. The KTS 200 contains a computer unit with memory card and a 3.5 inch LCD display. The KTS 200 control unit diagnosis software is pre-installed on the memory card in the factory.

The selection and function keys located next to the LCD display are used to operate the unit.

The KTS 200 and the accessories are housed in a protective case.

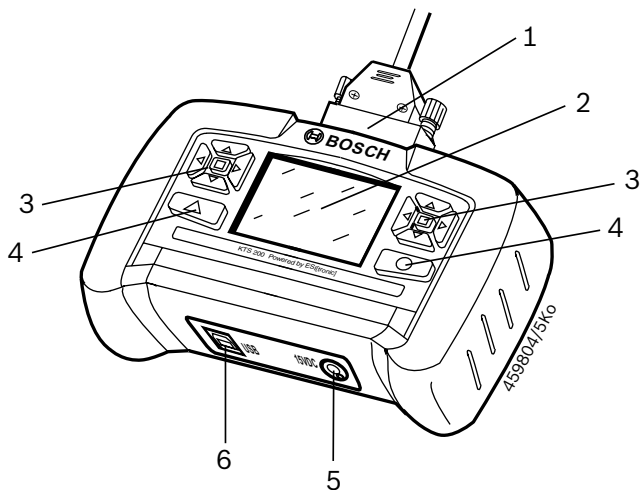


Fig. 1: KTS 200


- 1 OBD diagnostic lead connection
- 2 LCD display
- 3 Selection keys
- 4 Function keys
- 5 Power pack connection
- 6 USB connection

### 3.6 Selection and function keys

The selection and function keys are assigned various functions in the control unit diagnosis software. The functions of the keys are specified in the soft key bar in the control unit diagnosis software at each step in the program.

The selection keys with the left and right arrow symbols allow you to open and close selection lists.

The selection keys with the up and down arrow symbols allow you to select one of the options in an open selection list (holding down a selection key automatically scrolls through the options).

 The selection keys located to the right and left of the LCD display perform the same functions.

### 3.7 Wall bracket

The KTS 200 can be hooked onto the wall bracket (special accessory in some cases) for storage.

- Attach the wall bracket at the desired location using the 2 screw anchors and 2 wood screws supplied.

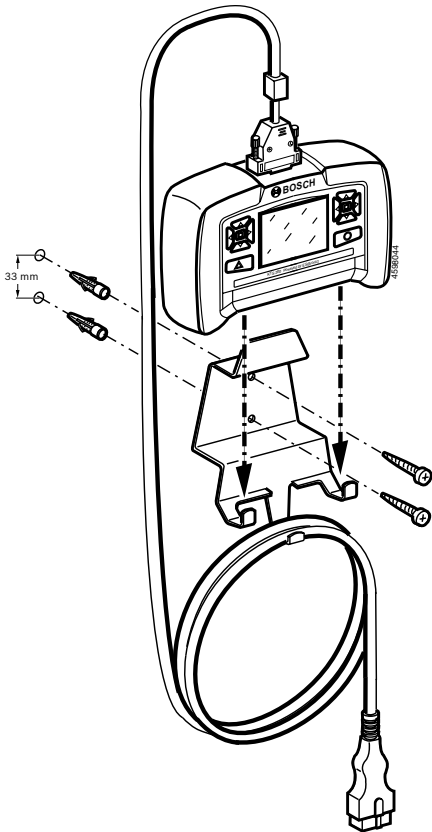



Fig. 2: Wall bracket assembly

## 4. Initial startup


### 4.1 Connection

Before starting up for the first time, make sure that the mains voltage matches the voltage specified on the power pack (use power supply lead supplied).

 The German power supply lead is included with the unit.

### 4.2 Licensing with ESI[tronic] Startcenter

Before you can use the KTS 200 to perform control unit diagnosis, you must install the “ESI[tronic] Startcenter” software on a PC/laptop and then license the KTS 200.

 Do not connect the KTS 200 to the PC/laptop until prompted to do so during the installation routine.


#### 4.2.1 Installing ESI[tronic] Startcenter from DVD

Procedure:


1. Insert the “ESI[tronic] Startcenter” DVD in the DVD drive (e.g. “D:”) on the PC/laptop.
2. Open the “Run” input window (select “Start >> Run...” in the taskbar).
3. Enter `D:\setup.exe` and confirm by clicking <OK>.
  - ⇒ The Setup routine is started.



4. Select the installation language and confirm with <OK>.

 The installation language selected will also be the language used in ESI[tronic] Startcenter.

5. Follow the installation instructions on the screen.

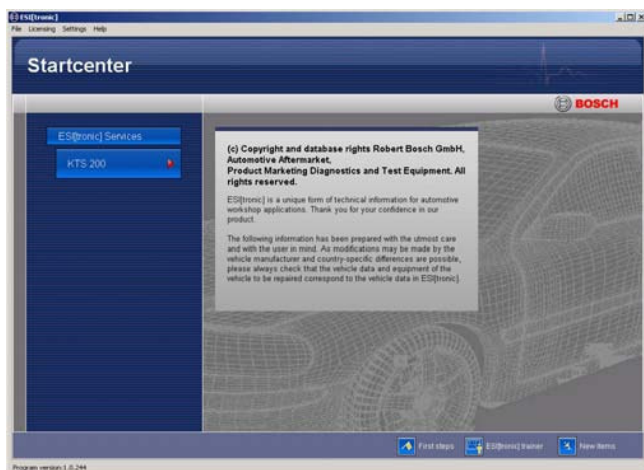
 In the “Country selection” installation menu, you must select the country in which the KTS 200 will be operated.



! The first time you connect the KTS 200 to the PC/laptop, the USB driver installation in the Windows operating system must not be carried out. The ESI[tronic] Startcenter installation routine automatically installs the USB driver that enables the KTS 200 to communicate with the PC/laptop.

i If the Adobe Reader software is not yet installed on the PC/laptop, it will be installed at the end of the ESI[tronic] Startcenter installation routine. Adobe Reader is required to display the logs from KTS 200 control unit diagnosis on the PC/laptop.

6. When installation is complete, restart the computer.
  - ⇒ Windows is shut down and ESI[tronic] Startcenter is restarted.



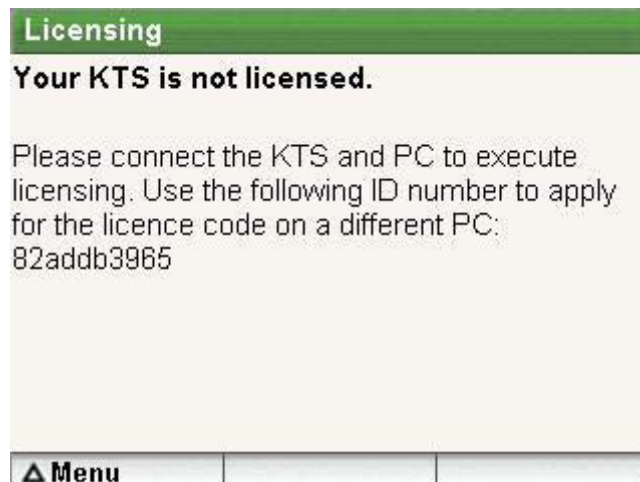
7. License the KTS 200 either by fax or online.

i The **“Help >> Help”** menu opens up the online help. Here, you will find all of the important information about ESI[tronic] Startcenter.

#### 4.2.2 Starting the KTS 200

1. Connect the KTS 200 to the mains using the power pack supplied.
  - ⇒ The KTS 200 starts up.

i When turned on for the first time, the KTS 200 always starts in English.



2. If you want to use an alternative language on the KTS 200, select it under **“Menu >> Settings >> Language”**.
3. Connect the KTS 200 to the PC using the USB connecting lead.
  - ⇒ The KTS 200 waits for licensing to be completed.

#### 4.2.3 Licensing the KTS 200 by fax

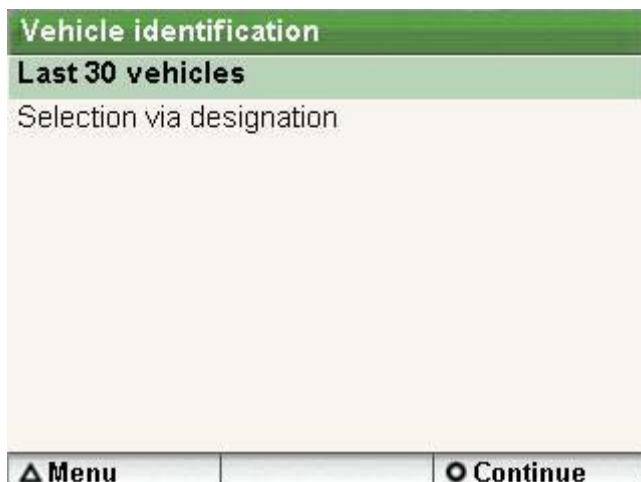
1. In Startcenter, select “**Licensing >> Fax**” in the menu.  
⇒ The “**License request**” input window is opened.
2. Step 1: Enter your company data.
3. Step 2: Select the country for the license request.
4. Step 3: Enter the ID number and print out the licensing form.
5. Sign the licensing form and return it by fax.

#### 4.2.4 Performing KTS 200 fax licensing

Once you have received the license key by fax, you need to perform the actual licensing.

1. Connect the KTS 200 to the mains using the power pack supplied.  
⇒ The KTS 200 starts up.
2. Connect the KTS 200 to the PC using the USB connecting lead.
3. In Startcenter, click on “**Licensing >> Perform licensing**” in the menu.  
⇒ The “**Perform license request**” input window is opened.
4. Enter the customer number, ID number and license key.
5. Perform licensing.  
⇒ The license key is transferred.  
⇒ If licensing is successful, the KTS 200 is restarted.

→ The KTS 200 is now licensed and you can perform control unit diagnosis.



#### 4.2.5 Online KTS 200 licensing

! Online licensing can only be performed on a PC with Internet access.

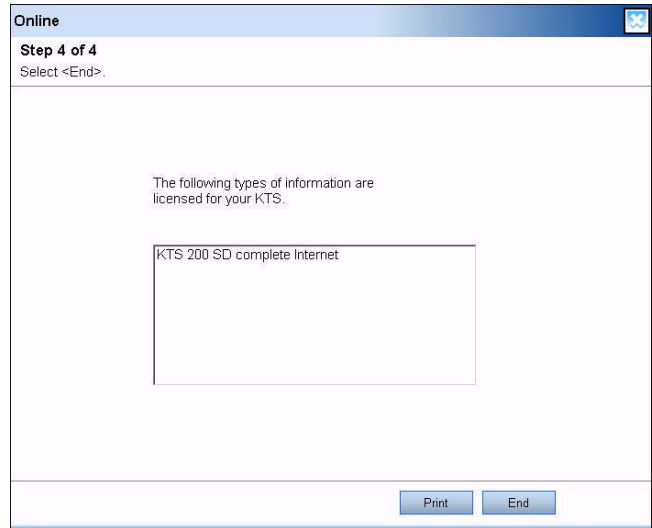
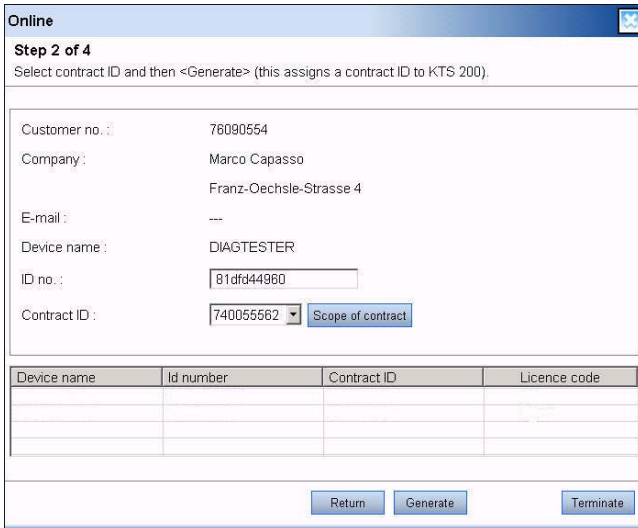
1. Connect the KTS 200 to the mains using the power pack supplied.  
⇒ The KTS 200 starts up.
2. Connect the KTS 200 to the PC using the USB connecting lead.
3. In Startcenter, select “**Licensing >> Online**” in the menu.  
⇒ The “**Online**” input window is opened.

The screenshot shows a window titled 'Online' with a close button in the top right corner. The window content includes the text 'Step 1 of 4' and 'Enter customer no. and password'. Below this is a message: 'Please log on with your customer no. and password (customer no. and password can be found on delivery notice/license agreement). This is only necessary the first time and is then implemented automatically.' There are two input fields: 'Customer no.:' with the value '76090554' and 'Password:' with four asterisks. At the bottom right, there are two buttons: 'Login' and 'Terminate'.

4. Step 1: Enter the customer number / password and select <Login>.  
⇒ The Internet connection for online licensing is established.


! If “**Login**” is not possible, check your proxy settings under “**Settings >> User settings**”.



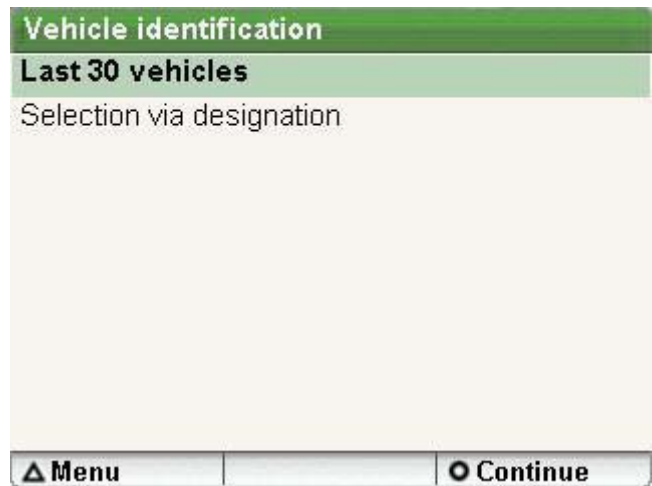
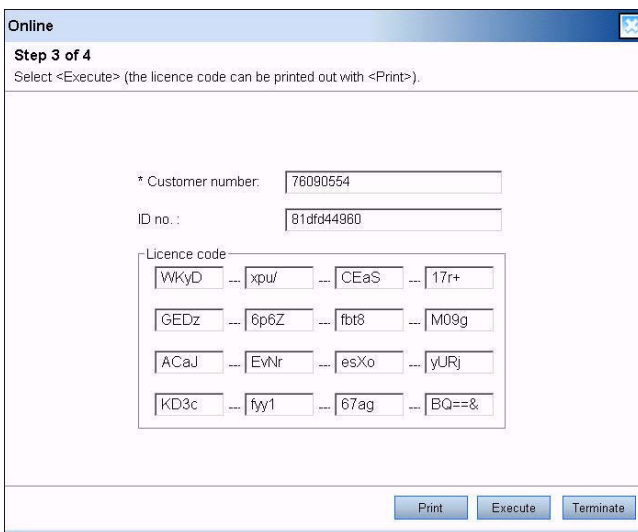



5. Step 2: Select the contract ID and then select **<Generate>**.

⇒ The license key is requested.

 The request for the license key can take several seconds.

→ The KTS 200 is now licensed and you can perform control unit diagnosis.



 While the license key is being transferred, the USB connection and the power supply to the KTS 200 may not be broken.

6. **<Select <Execute>**.

⇒ The license key is transferred to the KTS 200.

⇒ If licensing is successful, the KTS 200 is restarted.

## 5. Operation

### 5.1 Connection to the vehicle

The KTS 200 is designed for operation on a vehicle with a battery voltage of 12 Volts and 24 Volts.

**!** Make sure that the OBD diagnostic lead is correctly plugged into the KTS 200 and securely screwed in. If incorrectly plugged in, the pins on the male connector may bend or be broken off. Only use the OBD diagnostic lead supplied.

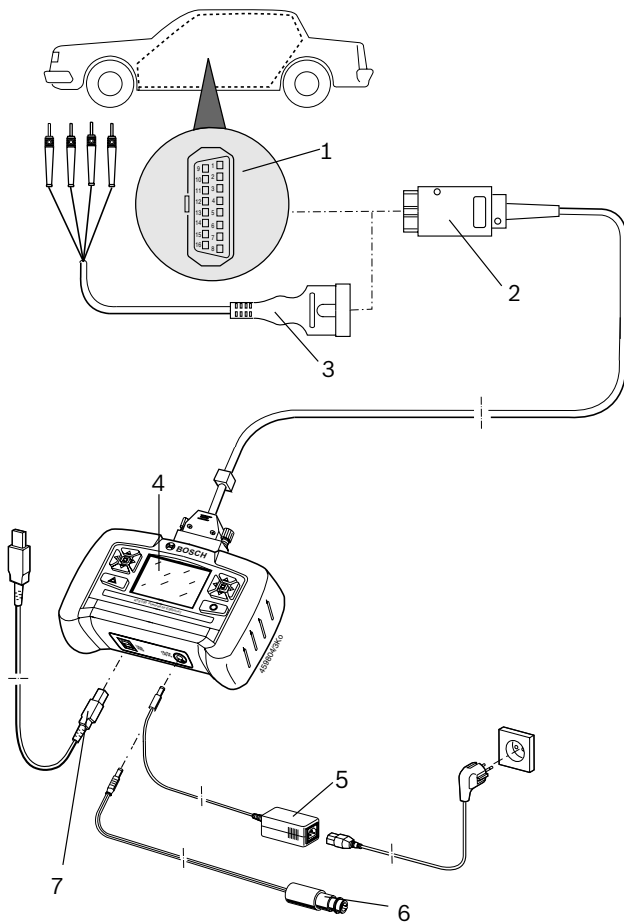


Fig. 3: KTS 200 connection schematic

- 1 OBD diagnostic socket in vehicle
- 2 OBD diagnostic lead
- 3 UNI connecting lead (special accessory)
- 4 KTS 200
- 5 Power pack
- 6 Connecting lead for cigarette lighter socket
- 7 USB connecting lead



**When placing the KTS 200 on the steering wheel, there is a risk of injury due to triggering of the airbag.**

The connection to the diagnostic interface in the vehicle is made via

- the OBD diagnostic lead (Fig. 3, item 2) or
- the OBD diagnostic lead and also the UNI connecting lead (Fig. 3, item 3; special accessory) or
- the OBD diagnostic lead and a vehicle-specific adapter lead (special accessory) or
- a vehicle-specific adapter lead (special accessory).

### 5.2 Turning on

The KTS 200 is normally supplied with power by the OBD diagnostic socket in the vehicle. If the position of the OBD diagnostic socket in the vehicle is not known, we recommend connecting the KTS 200 to the cigarette lighter socket using the connecting lead and searching for the OBD diagnostic socket using the KTS 200 control unit diagnosis software.

**i** On some vehicles, the cigarette lighter socket only supplies power when the ignition is turned on.

**i** In test steps that require the engine to be started, the battery voltage may drop to a point at which the supply from the vehicle is no longer guaranteed. In these cases, it may be necessary to use the power pack to supply the KTS 200 with power.

**i** On some vehicles, the power supply may only be present on the OBD interface when the ignition has been turned on.

If the KTS 200 is connected to a PC/laptop using the USB connecting lead, the KTS 200 power supply must come from the power pack supplied.

### 5.3 Turning off


The KTS 200 is always turned off when the OBD diagnostic lead, the power pack or the connecting lead for the cigarette lighter socket are not connected.

### 5.4 Program description

The online help for the KTS 200 control unit diagnosis software is opened under **“Menu >> Help”** in the soft key bar. Basic information about the KTS 200 and ESI[tronic] Startcenter can be found under **“ESI[tronic] trainer”** in the ESI[tronic] Startcenter software.


## 5.5 Software update

The software update is either performed using the “**ESI[tronic] Startcenter**” DVD or “**online**”.

 The online software update (section 5.5.2) can only be performed with ESI[tronic] Startcenter version 2007/3 or later.

### 5.5.1 Software update using the ESI[tronic] Startcenter DVD

1. Insert the “**ESI[tronic] Startcenter**” DVD in the DVD drive (e.g. “D:\”) on the PC/laptop.
2. Open the “**Run**” input field (select “**Start >> Run...**” in the taskbar).
3. Enter **D:\setup.exe** and confirm by clicking **<OK>**.
  - ⇒ The Setup routine is started.
  - ⇒ Follow the installation instructions on the screen.
4. When installation is complete, restart the computer.
  - ⇒ Windows is shut down and ESI[tronic] Startcenter is restarted.
5. Connect the KTS 200 to the PC using the USB connecting lead.
6. Connect the KTS 200 to the mains using the power pack supplied.
  - ⇒ The KTS 200 starts up.

 During the software update, the USB connection and the power supply to the KTS 200 may not be broken.


7. ESI[tronic] Startcenter: Open “**KTS 200 >> Device information**”.
8. Select an available update.
9. Select **<Update>**.

→ The system software is installed on the KTS 200.

### 5.5.2 Online software update


1. Start “**ESI[tronic] Startcenter**”.
2. Open the “**Settings >> Online updates**” input window.
3. Enter the customer number and password and select **<Next>**.

 If “**Login**” is not possible, check your proxy settings under “**Settings >> User settings**”.

4. Select an available update and start the software update.
  5. Follow the installation instructions on the screen.
  6. When installation is complete, restart the computer.
    - ⇒ Windows is shut down and ESI[tronic] Startcenter is restarted.
  7. Connect the KTS 200 to the PC using the USB connecting lead.
  8. Connect the KTS 200 to the mains using the power pack supplied.
    - ⇒ The KTS 200 starts up.
-  During the software update, the USB connection and the power supply to the KTS 200 may not be broken.
9. ESI[tronic] Startcenter: “**KTS 200 >> Device information**”.
  10. Select an available update
  11. Select **<Update>**.

→ The system software is installed on the KTS 200.


## 5.6 Faults

 The KTS 200 may not be opened. Opening the KTS 200 erases its licensing data. It is then no longer possible to perform control unit diagnosis.

### No communication with the control unit

The fault message “**No system found**” appears during control unit diagnosis.

Possible causes	What can you do?
Incorrect lead connected.	Check whether the correct lead has been used.
Incorrect pin selected in pin selection menu	Under “Start >> Diagnostic socket”, check which pin has to be used.

 If problems of a different nature occur, please contact the ESI[tronic] service hotline directly.

## 6. Maintenance

### 6.1 Cleaning

The housing and the display on the KTS 200 may only be cleaned with soft cloths and with neutral cleaning agents. Do not use any abrasive cleaning agent or rough cleaning cloths.

### 6.2 Spare and wearing parts

Description	Order number
System tester KTS 200 (green)	1 687 023 279
System tester KTS 200 (blue)	1 687 023 428
System tester KTS 200 (gray)	1 687 023 429
Power pack	1 687 023 889
Power supply lead <sup>(c)</sup>	1 684 461 106
USB connecting lead, 1 m <sup>(c)</sup>	1 684 465 491
OBD diagnostic lead, 1.5 m <sup>(c)</sup>	1 684 465 555
Wall bracket	1 681 320 082

<sup>(c)</sup> Wearing parts

## 7. Technical data

### 7.1 General data

Property	Value/Range
Operating voltage	7 VDC – 34 VDC
Power consumption	approx. 7 Watt
LCD display	3,5" 320 * 240 Pixel
Dimensions (L x W x H)	140 x 220 x 40 mm
Weight (without connecting leads)	600 g
Operating temperature	5 °C – 40 °C
Relative humidity	90 % (at 25 °C)
Protection class	IP 30

### 7.2 Interface protocols

The following interfaces and their associated protocols are supported for control unit diagnosis in compliance with ISO 15031:

- ISO 9141-2 (communication lines K and L)
- SAE J1850VPW und SAE J1850PWM (communication lines BUS+ and BUS-)
- CAN ISO 11898 ISO 15765-4 (OBD) (communication lines CAN-H and CAN-L)
- CAN Single Wire
- CAN Low Speed

### 7.3 Power pack

Property	Value/Range
Input voltage	90 VAC – 264 VAC
Input frequency	47 Hz – 63 Hz
Output voltage	15 V
Operating temperature	0 °C – 40 °C